<110> Rosen et al.

<120> Nucleic Acids, Proteins, and Antibodies

<130> PA003P1

<150> unassigned
<151> 2001-11-30

<150> PCT/US00/22157
<151> 2000-08-11

<150> 60/148,680
<151> 1999-08-13

<160> 56

<170> PatentIn Ver. 2.0

<210> 1
<211> 733
<212> DNA
<213> Homo sapiens

<400> 1
```
gggatccgga gcccaaatct tctgacaaaa ctcacacatg cccaccgtgc ccagcacctg     60
aattcgaggg tgcaccgtca gtcttcctct tccccccaaa acccaaggac accctcatga    120
tctcccggac tcctgaggtc acatgcgtgg tggtggacgt aagccacgaa gaccctgagg    180
tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg    240
aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact    300
ggctgaatgg caaggagtac aagtgcaagg tctccaacaa agccctccca acccccatcg    360
agaaaaccat ctccaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc    420
catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctggtc aaaggcttct    480
atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagaac aactacaaga    540
ccacgcctcc cgtgctggac tccgacggct ccttcttcct ctacagcaag ctcaccgtgg    600
acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat gaggctctgc    660
acaaccacta cacgcagaag agcctctccc tgtctccggg taaatgagtg cgacggccgc    720
gactctagag gat                                                       733
```

<210> 2
<211> 5
<212> PRT
<213> Homo sapiens

<220>
<221> Site
<222> (3)
<223> Xaa equals any of the twenty naturally ocurring L-amino acids

<400> 2
```
Trp Ser Xaa Trp Ser
 1               5
```

<210> 3
<211> 86
<212> DNA
<213> Artificial Sequence

<220>
<221> Primer_Bind
<223> Synthetic sequence with 4 tandem copies of the GAS binding site
      found in the IRF1 promoter (Rothman et al., Immunity 1:457-468
      (1994)), 18 nucleotides complementary to the SV40 early promoter,
      and a Xho I restriction site.

<400> 3

```
gcgcctcgag atttccccga aatctagatt tccccgaaat gatttccccg aaatgatttc    60
cccgaaatat ctgccatctc aattag                                         86
```

<210> 4
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<221> Primer_Bind
<223> Synthetic sequence complementary to the SV40 promter; includes a
      Hind III restriction site.

<400> 4
```
gcggcaagct ttttgcaaag cctaggc                                        27
```

<210> 5
<211> 271
<212> DNA
<213> Artificial Sequence

<220>
<221> Protein_Bind
<223> Synthetic promoter for use in biological assays; includes GAS
      binding sites found in the IRF1 promoter (Rothman et al., Immunity
      1:457-468 (1994)).

<400> 5
```
ctcgagattt ccccgaaatc tagatttccc cgaaatgatt tccccgaaat gatttccccg    60
aaatatctgc catctcaatt agtcagcaac catagtcccg cccctaactc cgcccatccc   120
gcccctaact ccgcccagtt ccgcccattc tccgccccat ggctgactaa ttttttttat   180
ttatgcagag gccgaggccg cctcggcctc tgagctattc cagaagtagt gaggaggctt   240
ttttggaggc ctaggctttt gcaaaaagct t                                  271
```

<210> 6
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<221> Primer_Bind
<223> Synthetic primer complementary to human genomic EGR-1 promoter
      sequence (Sakamoto et al., Oncogene 6:867-871 (1991)); includes a
      Xho I restriction site.

<400> 6
```
gcgctcgagg gatgacagcg atagaaccccc gg                                 32
```

<210> 7
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<221> Primer_Bind
<223> Synthetic primer complementary to human genomic EGR-1 promoter
      sequence (Sakamoto et al., Oncogene 6:867-871 (1991)); includes a
      Hind III restriction site.

<400> 7
```
gcgaagcttc gcgactcccc ggatccgcct c                                   31
```

<210> 8
<211> 12
<212> DNA
<213> Homo sapiens

<400> 8
ggggactttc cc   12

<210> 9
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<221> Primer_Bind
<223> Synthetic primer with 4 tandem copies of the NF-KB binding site
      (GGGGACTTTCCC), 18 nucleotides complementary to the 5' end of the
      SV40 early promoter sequence, and a XhoI restriction site.

<400> 9
gcggcctcga ggggactttc cgggggactt ccgggggact ttccgggact ttccatcctg   60
ccatctcaat tag   73

<210> 10
<211> 256
<212> DNA
<213> Artificial Sequence

<220>
<221> Protein_Bind
<223> Synthetic promoter for use in biological assays; includes NF-KB
      binding sites.

<400> 10
ctcgagggga ctttcccggg gactttccgg ggactttccg ggactttcca tctgccatct   60
caattagtca gcaaccatag tcccgcccct aactccgccc atcccgcccc taactccgcc   120
cagttccgcc cattctccgc cccatggctg actaattttt tttatttatg cagaggccga   180
ggccgcctcg gcctctgagc tattccagaa gtagtgagga ggcttttttg gaggcctagg   240
cttttgcaaa aagctt   256

<210> 11
<211> 800
<212> DNA
<213> Homo sapiens

<400> 11
tcgacccacg cgtccgaact cagactcagc caacagagat tgttgatttg cctcttaagc   60
aagagattca ttgcagctca gcatggctca gaccagctca tacttcatgc tgatctcctg   120
cctgatgttt ctgtctcaga gccaaggcca agaggcccag acagagttgc cccaggcccg   180
gatcagctgc ccagaaggca ccaatgccta tcgctcctac tgctactact ttaatgaaga   240
ccgtgagacc tgggttgatg cagatctcta ttgccagaac atgaattcgg gcaacctggt   300
gtctgtgctc acccaggccg agggtgcctt tgtggcctca ctgattaagg agagtggcac   360
tgatgacttc aatgtctgga ttggcctcca tgacccaaa aagaaccgcc gctggcactg   420
gagcagtggg tccctggtct cctacaagtc ctggggcatt ggagccccaa gcagtgttaa   480
tcctggctac tgtgtgagcc tgacctcaag cacaggattc cagaaatgga aggatgtgcc   540
ttgtgaagac aagttctcct ttgtctgcaa gttcaaaaac tagaggcagc tggaaaatac   600
atgtctagaa ctgatccagc aattacaacg gagtcaaaaa ttaaaccgga ccatctctcc   660
aactcaactc aacctggaca ctctcttctc tgctgagttt gccttgttaa tcttcaatag   720
ttttacctac cccagtcttt ggaaccctaa ataataaaaa taaacatgtt ccactatta   780
aaacaaaaaa aaaaaaaaaa   800

<210> 12
<211> 514
<212> DNA
<213> Homo sapiens

<400> 12
ccacgcgtcc gctgcactct caggtattcc ctgctcttac tccaaaaaga tggacccagg   60
tccgaagggg cactgccact gtggggggca tggccatcct ccaggtcact gcgggccacc   120
ccctggccat ggcccagggc cctgcgggcc accccccac catggcccag ggcctgcgg   180

```
gccacccccc caccatggtc cagggccctg cgggccaccc cctggccatg gcccagggcc      240
ctgcgggcca cccccccacc atggtccagg gccctgcggg cctccccctg gccatggccc      300
aggtcaccca cccccctggtc cacatcactg aggaagtaga agaaaacagg acacaagatg      360
gcaagcctga gagaattgcc cagctgacct ggaatgaggc ctaaaccaca atcttctctt      420
cctaataaac agcctcctag aggccacatt ctattcttta aaaaaaaaaa aaaaaaaaaa      480
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa                                   514
```

```
<210> 13
<211> 1893
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1184)..(1184)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (1865)..(1865)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (1883)..(1883)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (1887)..(1887)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (1893)..(1893)
<223> n equals a,t,g, or c
```

```
<400> 13
cccacgcgtc cgcggacgcg tgggcgcgcg ggagctggga ggctgcgaga tccctaccgc       60
agtagccgcc tctgccgccg cggagcttcc cgaacctctt cagccgcccg gagccgctcc      120
cggagcccgg ccgtagaggc tgcaatcgca gccgggagcc cgcagcccgc gccccgagcc      180
cgccgccgcc cttcgagggc gccccaggcc gcgccatggt gaaggtgacg ttcaactccg      240
ctctggccca gaaggaggcc aagaaggacg agcccaagag cggcgaggag gcgctcatca      300
tccccccccga cgccgtcgcg gtggactgca aggacccaga tgatgtggta ccagttggcc      360
aaagaagagc ctggtgttgg tgcatgtgct ttggactagc atttatgctt gcaggtgtta      420
ttctaggagg agcatacttg tacaaatatt ttgcacttca accagatgac gtgtactact      480
gtggaataaa gtacatcaaa gatgatgtca tcttaaatga gccctctgca gatgccccag      540
ctgctctcta ccagacaatt gaagaaaata ttaaaatctt tgaagaagaa gaagttgaat      600
ttatcagtgt gcctgtccca gagtttgcag atagtgatcc tgccaacatt gttcatgact      660
ttaacaagaa acttacagcc tatttgatc ttaacctgga taagtgctat gtgatcctc       720
tgaacacttc cattgttatg ccacccagaa acctactgga gttacttatt aacatcaagg      780
ctggaaccta tttgcctcag tcctatctga ttcatgagca catggttatt actgatcgca      840
ttgaaaacat tgatcacctg ggtttcttta tttatcgact gtgtcatgac aaggaaactt      900
acaaactgca acgcagagaa actattaaag gtattcagaa acgtgaagcc agcaattgtt      960
tcgcaattcg gcattttgaa aacaaatttg ccgtggaaac tttaatttgt tcttgaacag     1020
tcaagaaaaa cattattgag gaaaattaat atcacagcat aaccccaccc tttacatttt     1080
gtgcagtgat tatttttaa agtcttcttt catgtaagta gcaaacaggg ctttactatc     1140
ttttcatctc attaattcaa ttaaaaccat taccttaaaa tttnaaaaaa aaaaaaaaaa     1200
aggcccgccg cgctcgcctc tccgccccgc gtccagctcg cccagctcgc ccagcgtccg     1260
ccgcgcctcg gccaaggctt caacggacca caccaaaatg ccatctcaaa tggaacacgc     1320
catggaaacc atgatgttta catttcacaa attcgctggg gataaaggct acttaacaaa     1380
ggaggacctg agagtactca tggaaaagga gttccctgga ttttttggaaa atcaaaaaga    1440
ccctctggct gtggacaaaa taatgaagga cctggaccag tgtagagatg gcaaagtggg     1500
cttccagagc ttcttttccc taattgcggg cctcaccatt gcatgcaatg actattttgt     1560
agtacacatg aagcagaagg gaaagaagta ggcagaaatg agcagttcgc tcctcccctga    1620
taagagttgt cccaaagggt cgcttaagga atctgcccca cagcttcccc catagaagga     1680
```

```
tttcatgagc agatcaggac acttagcaaa tgtaaaaata aaatctaact ctcatttgac    1740
aagcagagaa agaaaagtta aataccagat aagcttttga tttttgtatt gtttgcatcc    1800
ccttgccctc aataaataaa gttctttttt agttccaaaa aaaaaaaaag ggcggccgtt    1860
taarngatcc aasttacgta ccntgcntgc gan                                 1893
```

<210> 14
<211> 1681
<212> DNA
<213> Homo sapiens

<400> 14
```
gcccgctgag gacgcagcgt cagctgacct ggggagtcgc gattcgtgcc ggccggtcct     60
ggttctccgg tcccgccgct cccgcagcag ccatgtcgtt cttcccggag ctttacttta    120
acgtggacaa tggctacttg gagggactgg tgcgcggcct gaaggccggg gtgctcagcc    180
aggccgacta cctcaacctg gtgcagtgcg agacgctaga ggacttgaaa ctgcatctgc    240
agagcactga ttatggtaac ttcctggcca acgaggcatc acctctgacg gtgtcagtca    300
tcgatgaccg gctcaaggag aagatggtgg tggagttccg ccacatgagg aaccatgcct    360
atgagccact cgccagcttc ctagacttca ttacttacag ttacatgatc gacaacgtga    420
tcctgctcat cacaggcacg ctgcaccagc gctccatcgc tgagctcgtg cccaagtgcc    480
acccactagg cagcttcgag cagatggagg ccgtgaacat tgctcagaca cctgctgagc    540
tctacaatgc cattctggtg gacacgcctc ttgcggcttt tttccaggac tgcatttcag    600
agcaggacct tgacgagatg aacatcgaga tcatccgcaa caccctctac aaggcctacc    660
tggagtcctt ctacaagttc tgcaccctac tgggcgggac tacggctgat gccatgtgcc    720
ccatcctgga gtttgaagca gaccgccgcg ccttcatcat caccatcaat tctttcggca    780
cagagctgtc caaagaggac cgtgccaagc tctttccaca ctgtgggcgg ctctaccctg    840
agggcctggc gcagctggct cgggctgacg actatgaaca ggtcaagaac gtggccgatt    900
actacccgga gtacaagctg ctcttcgagg gtgcaggtag caaccctgga gacaagacgc    960
tggaggaccg attctttgag cacgaggtaa agctgaacaa gttggccttc ctgaaccagt   1020
tccactttgg tgtcttctat gccttcgtga agctcaagga gcaggagtgt cgcaacatcg   1080
tgtggatcgc tgaatgtatc gcccagcgcc accgcgccaa aatcgacaac tacatcccta   1140
tcttctagcg tcctggccca aggctctcaa ttgcactctt tgtgtgtgtg tgtgtgtgtg   1200
tgcgcgtgtg tgtgcgtgtg tgtgtatgtg gtctgtgaca agcctgtggc tcacctgcct   1260
gtccggggtg tagtacgctg tcctagcggc tgcccagttc tcctgaccct cttagagact   1320
gttcttaggc ctgaaaaggg gctgggcacc cccccccacc aaggatggac gaagaccccc   1380
tccagagcaa ggaggccccc tcagccctgt ggttacagcc gctgatgtat ctaagaagca   1440
tgtcactttc atgttcctcc ctaactccct gacctgagaa ccctggggcc tgggggcagt   1500
ttgagcctcc tctcccttct gtgggtcgct cccagagcca tggcccatgg gaaggacaga   1560
gtgtgtgtgt ccttggggcc tgggggggatg ttgctcctca gctccctccc tcagccctgc   1620
ccctctgaga caataaaact gccctctcta aggcaaaaaa aaaaaaaaaa aaaaaaaaaa   1680
a                                                                   1681
```

<210> 15
<211> 502
<212> DNA
<213> Homo sapiens

<400> 15
```
ggcacgagga gctctattgc caccatgagt ttctccggca agtaccaact gcagagccag     60
gaaaactttg aagccttcat gaaggcaatc ggtctgccgg aagagctcat ccagaagggg    120
aaggatatca aggggggtgtc ggaaatcgtg cagaatggga agcacttcaa gttcaccatc    180
accgctgggt ccaaagtgat ccaaaacgaa ttcacggtgg gggaggaatg tgagctggag    240
acaatgacag gggagaaagt caagacagtg gttcagttgg aaggtgacaa taaactggtg    300
acaactttca aaaacatcaa gtctgtgacc gaactcaacg cgacataat caccaatacc    360
atgacattgg gtgacattgt cttcaagaga atcagcaaga gaatttaaac aagtctgcat    420
ttcatattat tttagtgtgt aaaattaatg taataaagtg aactttgttt taaaaaaaaa    480
aaaaaaaaaa aaaaaaaaaa aa                                             502
```

<210> 16
<211> 1478
<212> DNA
<213> Homo sapiens

<400> 16
```
ttggctgctc ctgacctcag caaaccaaga gggtatcact gggatacatc agattggatg     60
ccaagcgttc ctctgccgga catacaagag ttccccaact atgaggtgat tgatgagcag    120
acacccctgt actcagcaga tccaaacgcc atcgatacgg actattaccc tggaggctac    180
```

```
gacatcgaaa gtgattttcc tccacccccca gaagacttcc ccgcagctga tgagctacca   240
ccgttaccgc ccgaattcag caatcagttt gaatccatcc accctcctag agacatgcct   300
gccgcgggta gcttgggttc ttcatcaaga aaccggcaga ggttcaactt gaatcagtat   360
ttgcccaatt tttatcccct cgatatgtct gaacctcaaa caaaaggcac tggtgagaat   420
agtacttgta gagaacccca tgccccttac ccgccagggt atcaaagaca cttcgaggcg   480
cccgctgtcg agagcatgcc catgtctgtg tacgcctcca ccgcctcctg ctctgacgtg   540
tcagcctgct gcgaagtgga gtccgaggtc atgatgagtg actatgagag cggggacgac   600
ggccacttcg aagaggtgac gatcccgccc ctggattccc agcagcacac ggaagtctga   660
ctctcaactc cccccaaagt gcctgacttt agtgaaccta gaggtgatgt gagtaatccg   720
cgctgttctt tgcagcagtg cttccaagct ttttttggtg agccgaatgg gcatggctgc   780
gctggatcct cgcctctgg acgtgctagc catttccagt gtcccaacta ctgtcatcgt   840
gaggttttca tcggctgtgc catttcccaa cgtcttttgg gatttacatc tgtctgtgtt   900
aaaataatca aacgaaaaat cagtcctgtg ttgtcagcat gattcatgta tttatataga   960
tttgattatt ttaattttcc tgtctctttt ttttgtaaat tttatgtaca gatttgattt  1020
ttcatagttt taactagatt tccaagatat tttgtgcatt tgtttcaact gaattttggt  1080
ggtgtcagtg ccattatcta gcaccctgat ttttttttt ttttactata accagggttt  1140
cattctgtct ttttccactg aagtgtgaca ttttgttagt acatttcagt gtagtcattc  1200
atttctagct gtacatagga tgaaggagag atcagataca tgaacatgtc ttacatgggt  1260
tgctgtattt agaattataa acattttca ttattggaaa gtgtaacggg gaccttctgc  1320
atacctgttt agaaccaaaa ccaccatgac acagtttttt atagtgtctg tatatttgtg  1380
atgcaatggt cttgtaaagg ttttaatga aaactaccat tagccagtct ttcttactga  1440
caataaatta ttaataaaat aaaaaaaaaa aaaaaaaa                           1478
```

```
<210> 17
<211> 926
<212> DNA
<213> Homo sapiens

<400> 17
ggcacgagga gaactccagg attgtcctgc agatcgacaa cgcccgtctg gctgcagatg    60
acttccgaac caagtttgag acggaacagg ctctgcgcat gagcgtggag gccgacatca   120
acggcctgcg cagggtgctg gatgagctga ccctggccag gaccgacctg gagatgcaga   180
tcgaaggcct gaaggaagag ctggcctacc tgaagaagaa ccatgaggag gaaatcagta   240
cgctgagggg ccaagtggga ggccaggtca gtgtggaggt ggattccgct ccgggcaccg   300
atctcgccaa gatcctgagt gacatgcgaa gccaatatga ggtcatggcc gagcagaacc   360
ggaaggatgc tgaagcctgg ttcaccagcc ggactgaaga attgaaccgg gaggtcgctg   420
gccacacgga gcagctccag atgagcaggt ccgaggttac tgacctgcgg cgcacccttc   480
agggtcttga gattgagctg cagtcacagc tgagcatgaa agctgccttg gaagacacac   540
tggcagaaac ggaggcgcgc tttggagccc agctggcgca tatccaggcg ctgatcagcg   600
gtattgaagc ccagctgggc gatgtgcgag ctgatagtga gcggcagaat caggagtacc   660
agcggctcat ggacatcaag tcgcggctgg agcaggagat tgccacctac cgcagcctgc   720
tcgagggaca ggaagatcac tacaacaatt tgtctgcctc caaggtcctc tgaggcagca   780
ggctctgggg cttctgctgt cctttggagg gtgtcttctg ggtagaggga tgggaaggaa   840
gggacccta cccccggctc ttctcctgac ctgccaataa aaatttatgg tccaagggaa   900
aaaaaaaaa aaaaaaaaaa aaaaaa                                         926
```

```
<210> 18
<211> 547
<212> DNA
<213> Homo sapiens

<400> 18
caggtgtccc tgagcagctc catgtcggtg tcagagctga aggcgcagat cacccagaag    60
atcggcgtgc acgccttcca gcagcgtctg gctgtccacc cgagcggtgt ggcgctgcag   120
gacagggtcc cccttgccag ccagggcctg ggccccggca gcacggtcct gctggtggtg   180
gacaaatgcg acgaacctct gagcatcctg gtgaggaata caagggccg cagcagcacc   240
tacgaggtac ggctgacgca gaccgtgccc cacctgaagc agcaagtgag cgggctggag   300
ggtgtgcagg acgacctgtt ctggctgacc ttcgagggga agcccctgga ggaccagctc   360
ccgctggggg agtacggcct caagcccctg agcaccgtgt tcatgaatct gcgcctgcgg   420
ggagcggca cagagcctgg cgggcggagc taagggcctc caccagcatc cgagcaggat   480
caagggccgg aaataaaggc tgttgtaaag agaaaaaaaa aaaaaaaaaa aaaaaaaaaa   540
aaaaaaa                                                             547
```

```
<210> 19
<211> 565
<212> DNA
```

```
<213> Homo sapiens

<400> 19
ggcacgagga gacgcggagg gtcgccctga gggaagactc ttcgggatga caggagcggg      60
cctcggaagg gactcggggc gctggaggga agtttcgttc ttcggagaaa cagaacgcgc     120
tcgagggggc accgtggggc gagggcgcac tcggttgcgg cggcaggagt gagggacagt     180
cccccgattt cctgctccct ggggccctgg ggacgttccg gccaccggag cgactgtcac     240
gccgacgggg atcaccggcg cgagtggggg gtcggaaagc gcctcctccc cgcccggtcg     300
gcggctcccg ctgagccact tcctccgctt gccctgttcc cgctccttca ggagccagct     360
gtgccctttt ggaggcagga ataggtgtgt ctgtcgcctg cagccttacg ggctggctgg     420
tcgtgggtag gctttattgc ataagaatca agtttcctgt agggaaattg acagaccggt     480
actctttcta aattccctcg catctttttc taggttaaat tatgctcccc ccacgtcccc     540
gccttgtaaa aaaaaaaaa aaaaa                                            565


<210> 20
<211> 1768
<212> DNA
<213> Homo sapiens

<400> 20
ggcacgagct cccccagcct tgctgaagat ccgttccaag gagggcaggt gtgcgcagcc      60
atcccggact atacagacca tctgcctgcc ctcgatgtat aacgatcccc agtttggcac     120
aagctgtgag atcactggct ttggaaaaga gaattctagt aagtgacaat tgcgactgac     180
ttagaaggtc ctgaggagtg ttttgacctg aaaatgagcc cagtgtgatc aagggaagac     240
tgcagagtta gaggtgggag cactgaggcg gtggcagatg ggtccaggga tggatgaaga     300
gtgttgttta gggagcgatg ggctgcaaag gtaaatagat ggtaggggct ataggtggag     360
taaaggctca gatttgcatg gaagagaata agggccttcc ctggtagaga tactttatgg     420
ttcccctctc tggcagactc ccagtggaca gataaatctt gatgcaaacg cctccctgtt     480
ttctccacct agccgactat ctctatccgg agcagctgaa aatgactgtt gtgaagctga     540
tttcccaccg ggagtgtcag cagccccact actacggctc tgaagtcacc accaaaatgc     600
tgtgtgctgc tgacccacag tggaaaacag attcctgcca gggagactca ggggggacccc     660
tcgtctgttc cctccaaggc cgcatgactt tgactggaat tgtgagctgg ggccgtggat     720
gtgccctgaa ggacaagcca ggcgtctaca cgagagtctc acacttctta ccctggatcc     780
gcagtcacac caaggaagag aatggcctgg ccctctgagg gtccccaggg aggaaacggg     840
caccacccgc tttcttgctg gttgtcattt ttgcagtaga gtcatctcca tcagctgtaa     900
gaagagactg ggaagatagg ctctgcacag atggatttgc ctgtgccacc caccagggtg     960
aacgacaata gctttaccct caggcatagg cctgggtgct ggctgcccag accccctctgg    1020
ccaggatgga ggggtggtcc tgactcaaca tgttactgac cagcaacttg tctttttctg    1080
gactgaagcc tgcaggagtt aaaaagggca gggcatctcc tgtgcatggg tgaagggaga    1140
gccagctccc ccgacggtgg gcatttgcta ggccatggt tgagaaatga ataattcccc     1200
aattaggaag tgtaacagct gaggtctctt gagggagctt agccaatgtg ggagcagcgg    1260
tttggggagc agagacacta acgacttcag ggcagggctc tgatattcca tgaatgtatc    1320
aggaaatata tatgtgtgtg tatgtttgca cacttgtgtg tgggctgtga gtgtaagtgt    1380
gagtaagagc tggtgtctga ttgttaagtc taaatatttc cttaaactgt gtggactgtg    1440
atgccacaca gagtggtctt tctggagagg ttataggtca ctcctgggc ctcttgggtc     1500
ccccacgtga cagtgcctgg gaatgtatta ttctgcagca tgacctgtga ccagcactgt    1560
ctcagtttca cttcacata gatgtccctt tcttggccag ttatcccttc ctttttagcct    1620
agttcatcca atcctcactg ggtgggggtga ggaccactcc ttacactgaa tatttatatt    1680
tcactatttt tatttatatt tttgtaattt taaataaaag tgatcaataa aatgtgattt    1740
ttctgatgac aaaaaaaaaa aaaaaaaa                                       1768


<210> 21
<211> 424
<212> DNA
<213> Homo sapiens

<400> 21
ccacgcgtcc ggccggaagc aggaagcagc ctgtgctccc caggacctgc ctggttgggg      60
gaattggagg cttctaggag gtggcacggt gcacgccaag atggctgtgt ccacagagga     120
gctggaggcc acggttcagg aagtcctggg gagactgaag agccaccagt tttttccagtc    180
cacatgggac actgttgcct tcattgtttt cctcaccttc atgggcaccg tgctgctcct    240
gctgctgctg gtcgtcgccc actgctgctg ctgcagctcc cccgggcccc gcagggaaag    300
ccccaggaag gaaagaccca agggagtgga taacttggcc ctggaaccct gaccctgtgt    360
ctcctgcccg gtggcagtaa caaagccttc tgtctgccca gaaaaaaaaa aaaaaaaaaa    420
aaaa                                                                 424
```

```
<210> 22
<211> 629
<212> DNA
<213> Homo sapiens

<400> 22
ggcacgagct cgtgccgtga gacacaacca cccgggactt cacccagctc aacgagctgc      60
aatgccgctt tccaggcgc ctggtggtcc ttggcttccc ttgcaaccaa tttggacatc      120
agagcaggag agacagaagt agcaaaccct ctttcgagat gtccctccag ccccagaagt      180
acctccagcc tcacaccatc tcttcagcct agcaagttgc tggagggagt ctataaccta      240
ccaggagcca gccagccatt tgtatcaaga aatagaaatc tgccagggta cagtggctca      300
cacctataat cccagcgctt tgggaggcta agttctagga caaggcaaga agaaagcaag      360
aagctgtaaa tcccattcct ctgggtctca atttcaccct cagttcaagg agctgagtag      420
gcagaggcaa aggctatact caacacacgt gcaattgaaa gcaggcgagg caaaaccagg      480
gcagaggaaa ggaaaggggt gtgtgtgtag aactgctcag ggtagactgg agacaaaagc      540
aacagctcag aagtgctaaa tcttgaagag cagccaaagc atgggcaaca aagtgagacc      600
ccatctctac aaaaaaaaaa aaaaaaaaa                                       629

<210> 23
<211> 777
<212> DNA
<213> Homo sapiens

<400> 23
tcgacccacg cgtccgccca cgcgtccgcc cacgcgtccg cccacgcgtc cggcggagtt      60
gcagcgcctg gtggccgccg agcagcagaa ggcgcagttt actgcacagg ccacgtgccc      120
gtagaaaaga tactcatcca ctgtgggttt tggtttcgcc gtcaccccac tgcctcactg      180
gattgtgagg atcatatgcg acaatgtatt tgaaaacgac tagaacatta tcggaggaag      240
gtggactctg aagtagtcgc tgtagactat ggatgtagaa caagggtttg gagcccttcg      300
gacatggttc taacgcggcc tgacttcttg ctggctacat gaccttggac tacataatca      360
cgcctcttaa atgggaggtg atgacagcta tccttgagga ccttagagag aactgatttc      420
ttagtaccca gcctcacaaa tagtgcatca cttcatggag ttatgttggg ataaatgtgt      480
ggagaagcca gggaatcgcc tagactctcg cactgaaaat tgtctctcca gctgtgtaga      540
ccgcttcatt gacaccactc ttgccatcac cagtcggttt gcccagattg tacagaaagg      600
agggcagtag gccatccccc aggagaatga cagaagcaaa ggacttgtta ctaagcagat      660
ttaagggtca gtggggaag gctatcaacc cattgtcaga tcagcatcag gctgttatca      720
agtctgttgg tgctaaaaag taaaagatga aatgttcaaa gaaaaaaaaa aaaaaaa        777

<210> 24
<211> 843
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (812)..(812)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (822)..(822)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (829)..(829)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (838)..(838)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (841)..(841)
```

<223> n equals a,t,g, or c

<400> 24
```
aattcggcac gagctggcct gagaagccaa ctcagactca gccaacagag attgttgatt    60
tgcctcttaa gcaagagatt cattgcagct cagcatggct cagaccagct catacttcat   120
gctgatctcc tgcctgatgt ttctgtctca gagccaaggc caagaggccc agacagagtt   180
gccccaggcc cggatcagct gcccagaagg caccaatgcc tatcgctcct actgctacta   240
ctttaatgaa gaccgtgaga cctgggttga tgcagatctc tattgccaga acatgaattc   300
gggcaacctg gtgtctgtgc tcacccaggc cgagggtgcc tttgtggcct cactgattaa   360
ggagagtggc actgatgact tcaatgtctg gattggcctc catgacccca aaaagaaccg   420
ccgctggcac tggagcagtg ggtccctggt ctcctacaag tcctggggca ttggagcccc   480
aagcagtgtt aatcctggct actgtgtgag cctgacctca agcacaggat ccagaaatg    540
gaaggatgtg ccttgtgaag acaagttctc ctttgtctgc aagttcaaaa actagaggca   600
gctggaaaat acatgtctag aactgatcca gcaattacaa cggagtcaaa aattaaaccg   660
gaccatctct ccaactcaac tcaacctgga cactctcttc tctgctgagt ttgccttgtt   720
aatcttcaat agttttacct accccagtct ttggaaccyt aaataataaa aataaacatg   780
tttccactaa aaaaaaaaaa aaaaaaaamt cncagggggg gnccggtanc caattcgncc   840
naa                                                                  843
```

<210> 25
<211> 373
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (329)..(329)
<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (332)..(332)
<223> n equals a,t,g, or c

<400> 25
```
gctgcactct caggtattcc ctgctcttac tccaaaaaga tggacccagg tccgaagggg    60
cactgccact gtggggggca tggccatcct ccaggtcact gcggccacc ccctggccat    120
ggcccagggc cctgcgggcc accccccac catggcccag ggccctgcgg gccacccccc   180
caccatggtc caggccctg cgggccaccc cctggccatg gcccagggcc ctgcgggcca   240
cccccccacc atggtccagg gccctgcggg cctcccctg gccatggccc aggtcaccca   300
cccctggtc cacatcactg aggaagtana anaaacagg acacaagatg gcaagcctga   360
gagaaattgc cca                                                       373
```

<210> 26
<211> 441
<212> DNA
<213> Homo sapiens

<400> 26
```
ggcacgagga aaatcaaaaa gaccctctgg ctgtggacaa aataatgaag gacctggacc    60
agtgtagaga tggcaaagtg ggcttccaga gcttcttttc cctaattgcg ggcctcacca   120
ttgcatgcaa tgactatttt gtagtacaca tgaagcagaa gggaaagaag taggcagaaa   180
tgagcagttc gctcctccct gataagagtt gtcccaaagg gtcgcttaag gaatctgccc   240
cacagcttcc cccatagaag gatttcatga gcagatcagg acacttagca aatgtaaaaa   300
taaaatctaa ctctcatttg acaagcagag aaagaaaagt taaataccag ataagctttt   360
gatttttgta ttgtttgcat cccccttgccc tcaataaata aagttctttt ttagttccaa   420
aaaaaaaaaa aaaaaaaaa a                                               441
```

<210> 27
<211> 1637
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (738)..(738)

<223> n equals a,t,g, or c

<220>
<221> misc_feature
<222> (771)..(771)
<223> n equals a,t,g, or c

<400> 27
```
gcccgctgag  gacgcagcgt  cactgacctg  gggagtcgcg  attcgtgccg  gccggtcctg     60
gttctccggt  cccgccgctc  ccgcagcagc  catgtcgttc  ttcccggagc  tttactttaa    120
cgtggacaat  ggctacttgg  agggactggt  gcgcggcctg  aaggccgggg  tgctcagcca    180
ggccgactac  ctcaacctgg  tgcagtgcga  gacgctagag  gacttgaaac  tgcatctgca    240
gagcactgat  tatggtaact  tcctggccaa  cgaggcatca  cctctgacgg  tgtcagtcat    300
cgatgaccgg  ctcaaggaga  agatggtggt  ggagttccgc  cacatgagga  accatgccta    360
tgagccactc  gccagcttcc  tagacttcat  tacttacagt  tacatgatcg  acaacgtgat    420
cctgctcatc  acaggcacgc  tgcaccagcg  ctccatcgct  gagctcgtgc  ccaagtgcca    480
cccactaggc  agcttcgagc  agatggaggc  cgtgaacatt  gctcagacac  ctgctgagct    540
ctacaatgcc  attctggtgg  acacgcctct  tgcggctttt  ttccaggact  gcatttcaga    600
gcaggacctt  gacgagatga  acatcgagat  catccgcaac  accctctaca  aggcctacct    660
ggagtccttc  tacaagttct  gcaccctact  gggcgggact  acggctgatg  ccatgtgccc    720
catcctggag  tttscaangc  agaccgtgcc  aagctctttc  cacactgtgg  ncggctctac    780
cctgagggcc  tggcgcastg  gctcgggctg  acgactatga  acaggtcaag  aacgtggccg    840
attactaccg  ggagtacaag  ctgctcttcg  agggtgcagg  tagcaaccct  ggagacaaga    900
cgctggagga  ccgattcttt  gagcacgagg  taaagctgaa  caagttggcc  ttcctgaacc    960
agttccactt  tggtgtcttc  tatgccttcg  tgaagctcaa  ggagcaggag  tgtcgcaaca   1020
tcgtgtggat  cgctgaatgt  atcgcccagc  gccaccgcgc  caaaatcgac  aactacatcc   1080
ctatcttcta  gcgtcctggc  ccaaggctct  caattgcact  ctttgtgtgt  gtgtgtgtgt   1140
gtgtgcgcgt  gtgtgtgcgt  gtgtgtgtat  gtggtctgtg  acaagcctgt  ggctcacctg   1200
cctgtccggg  gtgtagtacg  ctgtcctagc  ggctgcccag  ttctcctgac  cctcttagag   1260
actgttctta  ggcctgaaaa  ggggctgggc  accccccccc  accaaggatg  gacgaagacc   1320
ccctccagag  caaggaggcc  ccctcagccc  tgtggttaca  gccgctgatg  tatctaagaa   1380
gcatgtcact  ttcatgttcc  tccctaactc  cctgacctga  gaaccctggg  gcctgggggc   1440
agtttgagcc  tcctctccct  tctgtgggtc  gctcccagag  ccatggccca  tgggaaggac   1500
agagtgtgtg  tgtccttggg  gcctgggggg  atgttgctcc  tcagctccct  ccctcagccc   1560
tgcccctctg  agacaataaa  actgccctct  ctaaggccaa  aaaaaaaaaa  aaaaaaaaaa   1620
aaaaaaaaaa  aaaaaaa                                                      1637
```

<210> 28
<211> 1471
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1014)..(1014)
<223> n equals a,t,g, or c

<400> 28
```
tttttttttt  tttttatttt  attaataatt  tattgtcagt  aagaaagact  ggctaatggt     60
agttttcatt  aaaaacctta  acaagaccat  tgcatcacaa  atatacagac  actataaaaa    120
ctgtgtcatg  gtggtttttgg  ttctaaacag  gtatgcagaa  ggtccccgtt  acactttcca    180
ataatgaaaa  atgtttataa  ttctaaatac  agcaacccat  gtaagacatg  ttcatgtatc    240
tgatctctcc  ttcatcctat  gtacagctag  aaatgaatga  ctacactgaa  atgtactaac    300
aaaatgtcac  acttcagtgg  aaaaagacag  aatgaaaccc  tggttatagt  aaaaaaaaaa    360
aatcagggtg  ctagataatg  gcactaccac  caccaaaatt  cagttgaaac  aaatgcacaa    420
aatatcttgg  aaatctagtt  aaaactatga  aaaatcaaat  ctgtacataa  aatttacaaa    480
aaaaagagac  aggaaaatta  aaataatcaa  atctatataa  atacatgaat  catgctgaca    540
acacaggact  gattttttcgt  ttgattattt  taacacagac  agatgtaaat  cccaaaagac    600
gttgggaaat  ggcacagccg  atgaaaacct  cacgatgaca  gtagttggga  cactggaaat    660
ggctagcacg  tccagaggcg  caggatccag  cgcaggccatg  cccattcggc  tcaccaaaaa    720
aagcttggaa  gcactgctgc  aaagaacagc  gcggattact  cacatcacct  ctaggttcac    780
taaagtcagg  cactttgggg  ggagttgaga  gtcagacttc  cgtgtgctgc  tgggaatcca    840
ggggcgggat  cgtcacctct  tcgaagtggc  cgtcgtcccc  gctctcatag  tcactcatca    900
tgacctcgga  ctccacttcg  cagcaggctg  acacgtcaga  gcaggaggcg  gtggaggcgt    960
acacagacat  gggcatgctc  tcgacagcgg  gcgcctcgaa  gtgtctttga  tacnctggcg   1020
ggtaagggc  atggggttct  ctacaagtac  tattctcacc  agtgcctttt  gtttgaggtt   1080
```

```
cagacatatc gaggggataa aaattgggca aatactgatt caagttgaac ctctgccggt    1140
ttcttgatga agaacccaag ctacccgcgg caggcatgtc tctaggaggg tggatggatt    1200
caaactgatt gctgaattcg ggcggtaacg gtggtagctc atcagctgcg gggaagtctt    1260
ctgggggtgg aggaaaatca ctttcgatgt cgtagcctcc agggtaatag tccgtatcga    1320
tggcgtttgg atctgctgag tacaggggtg tctgctcatc aatcacctca tagttgggga    1380
actcttgtat gtccggcaga ggaacgcttg gcatccaatc tgatgtatcc cagtgatacc    1440
ctcttggttt gctgaggtca ggagcagcca a                                   1471
```

<210> 29
<211> 422
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (419)..(419)
<223> n equals a,t,g, or c

<400> 29
```
gacggagccg gaagcaggaa gcagcctgtk ctccccagga cctgcctggt tgggggaatt     60
ggaggcttct aggaggtggc acggtgcacg ccaagatggc tgtgtccaca gaggagctgg    120
aggccacggt tcaggaagtc ctggggagac tgaagagcca ccagtttttc cagtccacat    180
gggacactgt tgccttcatt gttttcctca ccttcatggg caccgtgctg ctcctgctgc    240
tgctggtcgt cgcccactgc tgctgctgca gctccccggg gccccgcagg aaaagcccca    300
ggaaggaaag acccaaggga gtggataact tggccctgga accctgaccc tgtgtctcct    360
gcccggtggc agtaacaaag ccttctgtct gcccagaaaa aaaaaaaaaa aaaaaaaang    420
gg                                                                   422
```

<210> 30
<211> 166
<212> PRT
<213> Homo sapiens

<400> 30
```
Met Ala Gln Thr Ser Ser Tyr Phe Met Leu Ile Ser Cys Leu Met Phe
1               5                   10                  15

Leu Ser Gln Ser Gln Gly Gln Glu Ala Gln Thr Glu Leu Pro Gln Ala
            20                  25                  30

Arg Ile Ser Cys Pro Glu Gly Thr Asn Ala Tyr Arg Ser Tyr Cys Tyr
        35                  40                  45

Tyr Phe Asn Glu Asp Arg Glu Thr Trp Val Asp Ala Asp Leu Tyr Cys
    50                  55                  60

Gln Asn Met Asn Ser Gly Asn Leu Val Ser Val Leu Thr Gln Ala Glu
65                  70                  75                  80

Gly Ala Phe Val Ala Ser Leu Ile Lys Glu Ser Gly Thr Asp Asp Phe
                85                  90                  95

Asn Val Trp Ile Gly Leu His Asp Pro Lys Lys Asn Arg Arg Trp His
                100                 105                 110

Trp Ser Ser Gly Ser Leu Val Ser Tyr Lys Ser Trp Gly Ile Gly Ala
            115                 120                 125

Pro Ser Ser Val Asn Pro Gly Tyr Cys Val Ser Leu Thr Ser Ser Thr
        130                 135                 140

Gly Phe Gln Lys Trp Lys Asp Val Pro Cys Glu Asp Lys Phe Ser Phe
145                 150                 155                 160

Val Cys Lys Phe Lys Asn
                165
```

<210> 31
<211> 93
<212> PRT
<213> Homo sapiens

<400> 31
Met Asp Pro Gly Pro Lys Gly His Cys His Cys Gly Gly His Gly His
1   5   10   15

Pro Pro Gly His Cys Gly Pro Pro Pro Gly His Gly Pro Gly Pro Cys
            20   25   30

Gly Pro Pro Pro His His Gly Pro Gly Pro Cys Gly Pro Pro Pro His
        35   40   45

His Gly Pro Gly Pro Cys Gly Pro Pro Pro Gly His Gly Pro Gly Pro
    50   55   60

Cys Gly Pro Pro Pro His His Gly Pro Gly Pro Cys Gly Pro Pro Pro
65   70   75   80

Gly His Gly Pro Gly His Pro Pro Pro Gly Pro His His
                85   90

<210> 32
<211> 97
<212> PRT
<213> Homo sapiens

<400> 32
Met Pro Ser Gln Met Glu His Ala Met Glu Thr Met Met Phe Thr Phe
1   5   10   15

His Lys Phe Ala Gly Asp Lys Gly Tyr Leu Thr Lys Glu Asp Leu Arg
            20   25   30

Val Leu Met Glu Lys Glu Phe Pro Gly Phe Leu Glu Asn Gln Lys Asp
        35   40   45

Pro Leu Ala Val Asp Lys Ile Met Lys Asp Leu Asp Gln Cys Arg Asp
    50   55   60

Gly Lys Val Gly Phe Gln Ser Phe Phe Ser Leu Ile Ala Gly Leu Thr
65   70   75   80

Ile Ala Cys Asn Asp Tyr Phe Val Val His Met Lys Gln Lys Gly Lys
                85   90   95

Lys

<210> 33
<211> 351
<212> PRT
<213> Homo sapiens

<400> 33
Met Ser Phe Phe Pro Glu Leu Tyr Phe Asn Val Asp Asn Gly Tyr Leu
1   5   10   15

Glu Gly Leu Val Arg Gly Leu Lys Ala Gly Val Leu Ser Gln Ala Asp
            20   25   30

Tyr Leu Asn Leu Val Gln Cys Glu Thr Leu Glu Asp Leu Lys Leu His
            35   40   45

Leu Gln Ser Thr Asp Tyr Gly Asn Phe Leu Ala Asn Glu Ala Ser Pro
        50   55   60

Leu Thr Val Ser Val Ile Asp Asp Arg Leu Lys Glu Lys Met Val Val
65   70   75   80

Glu Phe Arg His Met Arg Asn His Ala Tyr Glu Pro Leu Ala Ser Phe
                85   90   95

Leu Asp Phe Ile Thr Tyr Ser Tyr Met Ile Asp Asn Val Ile Leu Leu
            100   105   110

Ile Thr Gly Thr Leu His Gln Arg Ser Ile Ala Glu Leu Val Pro Lys
            115   120   125

Cys His Pro Leu Gly Ser Phe Glu Gln Met Glu Ala Val Asn Ile Ala
        130   135   140

Gln Thr Pro Ala Glu Leu Tyr Asn Ala Ile Leu Val Asp Thr Pro Leu
145   150   155   160

Ala Ala Phe Phe Gln Asp Cys Ile Ser Glu Gln Asp Leu Asp Glu Met
                165   170   175

Asn Ile Glu Ile Ile Arg Asn Thr Leu Tyr Lys Ala Tyr Leu Glu Ser
            180   185   190

Phe Tyr Lys Phe Cys Thr Leu Leu Gly Gly Thr Thr Ala Asp Ala Met
        195   200   205

Cys Pro Ile Leu Glu Phe Glu Ala Asp Arg Arg Ala Phe Ile Ile Thr
    210   215   220

Ile Asn Ser Phe Gly Thr Glu Leu Ser Lys Glu Asp Arg Ala Lys Leu
225   230   235   240

Phe Pro His Cys Gly Arg Leu Tyr Pro Glu Gly Leu Ala Gln Leu Ala
            245   250   255

Arg Ala Asp Asp Tyr Glu Gln Val Lys Asn Val Ala Asp Tyr Tyr Pro
            260   265   270

Glu Tyr Lys Leu Leu Phe Glu Gly Ala Gly Ser Asn Pro Gly Asp Lys
        275   280   285

Thr Leu Glu Asp Arg Phe Phe Glu His Glu Val Lys Leu Asn Lys Leu
    290   295   300

Ala Phe Leu Asn Gln Phe His Phe Gly Val Phe Tyr Ala Phe Val Lys
305   310   315   320

Leu Lys Glu Gln Glu Cys Arg Asn Ile Val Trp Ile Ala Glu Cys Ile
            325   330   335

Ala Gln Arg His Arg Ala Lys Ile Asp Asn Tyr Ile Pro Ile Phe
        340   345   350

<210> 34
<211> 127
<212> PRT
<213> Homo sapiens

<400> 34
Met Ser Phe Ser Gly Lys Tyr Gln Leu Gln Ser Gln Glu Asn Phe Glu
1   5   10   15

Ala Phe Met Lys Ala Ile Gly Leu Pro Glu Glu Leu Ile Gln Lys Gly
            20   25   30

Lys Asp Ile Lys Gly Val Ser Glu Ile Val Gln Asn Gly Lys His Phe
        35   40   45

Lys Phe Thr Ile Thr Ala Gly Ser Lys Val Ile Gln Asn Glu Phe Thr
    50   55   60

Val Gly Glu Glu Cys Glu Leu Glu Thr Met Thr Gly Glu Lys Val Lys
65   70   75   80

Thr Val Val Gln Leu Glu Gly Asp Asn Lys Leu Val Thr Thr Phe Lys
                85   90   95

Asn Ile Lys Ser Val Thr Glu Leu Asn Gly Asp Ile Ile Thr Asn Thr
            100   105   110

Met Thr Leu Gly Asp Ile Val Phe Lys Arg Ile Ser Lys Arg Ile
        115   120   125

<210> 35
<211> 219
<212> PRT
<213> Homo sapiens

<400> 35
Leu Ala Ala Pro Asp Leu Ser Lys Pro Arg Gly Tyr His Trp Asp Thr
1   5   10   15

Ser Asp Trp Met Pro Ser Val Pro Leu Pro Asp Ile Gln Glu Phe Pro
            20   25   30

Asn Tyr Glu Val Ile Asp Glu Gln Thr Pro Leu Tyr Ser Ala Asp Pro
        35   40   45

Asn Ala Ile Asp Thr Asp Tyr Tyr Pro Gly Gly Tyr Asp Ile Glu Ser
    50   55   60

Asp Phe Pro Pro Pro Glu Asp Phe Pro Ala Ala Asp Glu Leu Pro
65   70   75   80

Pro Leu Pro Pro Glu Phe Ser Asn Gln Phe Glu Ser Ile His Pro Pro
                85   90   95

Arg Asp Met Pro Ala Ala Gly Ser Leu Gly Ser Ser Ser Arg Asn Arg
            100   105   110

Gln Arg Phe Asn Leu Asn Gln Tyr Leu Pro Asn Phe Tyr Pro Leu Asp
        115   120   125

Met Ser Glu Pro Gln Thr Lys Gly Thr Gly Glu Asn Ser Thr Cys Arg
    130   135   140

Glu Pro His Ala Pro Tyr Pro Pro Gly Tyr Gln Arg His Phe Glu Ala

```
         145                 150                 155               160
   Pro Ala Val Glu Ser Met Pro Met Ser Val Tyr Ala Ser Thr Ala Ser
                   165                 170                 175
   Cys Ser Asp Val Ser Ala Cys Cys Glu Val Glu Ser Glu Val Met Met
                   180                 185                 190
   Ser Asp Tyr Glu Ser Gly Asp Asp Gly His Phe Glu Glu Val Thr Ile
                   195                 200                 205
   Pro Pro Leu Asp Ser Gln Gln His Thr Glu Val
       210                 215
```

<210> 36
<211> 256
<212> PRT
<213> Homo sapiens

<400> 36

```
   His Glu Glu Asn Ser Arg Ile Val Leu Gln Ile Asp Asn Ala Arg Leu
    1               5                   10                  15
   Ala Ala Asp Asp Phe Arg Thr Lys Phe Glu Thr Glu Gln Ala Leu Arg
                   20                  25                  30
   Met Ser Val Glu Ala Asp Ile Asn Gly Leu Arg Arg Val Leu Asp Glu
               35                  40                  45
   Leu Thr Leu Ala Arg Thr Asp Leu Glu Met Gln Ile Glu Gly Leu Lys
       50                  55                  60
   Glu Glu Leu Ala Tyr Leu Lys Lys Asn His Glu Glu Glu Ile Ser Thr
   65                  70                  75                  80
   Leu Arg Gly Gln Val Gly Gly Gln Val Ser Val Glu Val Asp Ser Ala
                   85                  90                  95
   Pro Gly Thr Asp Leu Ala Lys Ile Leu Ser Asp Met Arg Ser Gln Tyr
                   100                 105                 110
   Glu Val Met Ala Glu Gln Asn Arg Lys Asp Ala Glu Ala Trp Phe Thr
               115                 120                 125
   Ser Arg Thr Glu Glu Leu Asn Arg Glu Val Ala Gly His Thr Glu Gln
       130                 135                 140
   Leu Gln Met Ser Arg Ser Glu Val Thr Asp Leu Arg Arg Thr Leu Gln
   145                 150                 155                 160
   Gly Leu Glu Ile Glu Leu Gln Ser Gln Leu Ser Met Lys Ala Ala Leu
                   165                 170                 175
   Glu Asp Thr Leu Ala Glu Thr Glu Ala Arg Phe Gly Ala Gln Leu Ala
                   180                 185                 190
   His Ile Gln Ala Leu Ile Ser Gly Ile Glu Ala Gln Leu Gly Asp Val
               195                 200                 205
   Arg Ala Asp Ser Glu Arg Gln Asn Gln Glu Tyr Gln Arg Leu Met Asp
       210                 215                 220
   Ile Lys Ser Arg Leu Glu Gln Glu Ile Ala Thr Tyr Arg Ser Leu Leu
   225                 230                 235                 240
```

Glu Gly Gln Glu Asp His Tyr Asn Asn Leu Ser Ala Ser Lys Val Leu
              245   250   255

<210> 37
<211> 143
<212> PRT
<213> Homo sapiens

<400> 37
Met Ser Val Ser Glu Leu Lys Ala Gln Ile Thr Gln Lys Ile Gly Val
  1   5   10   15

His Ala Phe Gln Gln Arg Leu Ala Val His Pro Ser Gly Val Ala Leu
         20   25   30

Gln Asp Arg Val Pro Leu Ala Ser Gln Gly Leu Gly Pro Gly Ser Thr
      35   40   45

Val Leu Leu Val Val Asp Lys Cys Asp Glu Pro Leu Ser Ile Leu Val
   50   55   60

Arg Asn Asn Lys Gly Arg Ser Ser Thr Tyr Glu Val Arg Leu Thr Gln
65   70   75   80

Thr Val Ala His Leu Lys Gln Gln Val Ser Gly Leu Glu Gly Val Gln
         85   90   95

Asp Asp Leu Phe Trp Leu Thr Phe Glu Gly Lys Pro Leu Glu Asp Gln
        100   105   110

Leu Pro Leu Gly Glu Tyr Gly Leu Lys Pro Leu Ser Thr Val Phe Met
      115   120   125

Asn Leu Arg Leu Arg Gly Gly Gly Thr Glu Pro Gly Gly Arg Ser
   130   135   140

<210> 38
<211> 41
<212> PRT
<213> Homo sapiens

<400> 38
Met Thr Gly Ala Gly Leu Gly Arg Asp Ser Gly Arg Trp Arg Glu Val
  1   5   10   15

Ser Phe Phe Gly Glu Thr Glu Arg Ala Arg Gly Gly Thr Val Gly Arg
         20   25   30

Gly Arg Thr Arg Leu Arg Arg Gln Glu
      35   40

<210> 39
<211> 118
<212> PRT
<213> Homo sapiens

<400> 39
```
Met Gln Thr Pro Pro Cys Phe Leu His Leu Ala Asp Tyr Leu Tyr Pro
 1               5                  10                  15

Glu Gln Leu Lys Met Thr Val Val Lys Leu Ile Ser His Arg Glu Cys
            20                  25                  30

Gln Gln Pro His Tyr Tyr Gly Ser Glu Val Thr Thr Lys Met Leu Cys
            35                  40                  45

Ala Ala Asp Pro Gln Trp Lys Thr Asp Ser Cys Gln Gly Asp Ser Gly
        50                  55                  60

Gly Pro Leu Val Cys Ser Leu Gln Gly Arg Met Thr Leu Thr Gly Ile
65                  70                  75                  80

Val Ser Trp Gly Arg Gly Cys Ala Leu Lys Asp Lys Pro Gly Val Tyr
                85                  90                  95

Thr Arg Val Ser His Phe Leu Pro Trp Ile Arg Ser His Thr Lys Glu
                100                 105                 110

Glu Asn Gly Leu Ala Leu
            115
```

<210> 40
<211> 110
<212> PRT
<213> Homo sapiens

<400> 40
```
Pro Arg Val Arg Pro Glu Ala Gly Ser Ser Leu Cys Ser Pro Gly Pro
 1               5                  10                  15

Ala Trp Leu Gly Glu Leu Glu Ala Ser Arg Arg Trp His Gly Ala Arg
            20                  25                  30

Gln Asp Gly Cys Val His Arg Gly Ala Gly Gly His Gly Ser Gly Ser
            35                  40                  45

Pro Gly Glu Thr Glu Glu Pro Pro Val Phe Pro Val His Met Gly His
        50                  55                  60

Cys Cys Leu His Cys Phe Pro His Leu His Gly His Arg Ala Ala Pro
65                  70                  75                  80

Ala Ala Ala Gly Arg Arg Pro Leu Leu Leu Leu Gln Leu Pro Arg Ala
                85                  90                  95

Pro Gln Gly Lys Pro Gln Glu Gly Lys Thr Gln Gly Ser Gly
                100                 105                 110
```

<210> 41
<211> 63
<212> PRT
<213> Homo sapiens

<400> 41
```
Asp Thr Thr Thr Arg Asp Phe Thr Gln Leu Asn Glu Leu Gln Cys Arg
 1               5                  10                  15

Phe Pro Arg Arg Leu Val Val Leu Gly Phe Pro Cys Asn Gln Phe Gly
```

```
                    20                    25                    30
His Gln Ser Arg Arg Asp Arg Ser Ser Lys Pro Ser Phe Glu Met Ser
         35                    40                    45

Leu Gln Pro Gln Lys Tyr Leu Gln Pro His Thr Ile Ser Ser Ala
      50                    55                    60
```

```
<210> 42
<211> 61
<212> PRT
<213> Homo sapiens

<400> 42
Tyr Pro Ala Ser Gln Ile Val His His Phe Met Glu Leu Cys Trp Asp
 1               5                    10                    15

Lys Cys Val Glu Lys Pro Gly Asn Arg Leu Asp Ser Arg Thr Glu Asn
              20                    25                    30

Cys Leu Ser Ser Cys Val Asp Arg Phe Ile Asp Thr Thr Leu Ala Ile
         35                    40                    45

Thr Ser Arg Phe Ala Gln Ile Val Gln Lys Gly Gly Gln
      50                    55                    60
```

```
<210> 43
<211> 166
<212> PRT
<213> Homo sapiens

<400> 43
Met Ala Gln Thr Ser Ser Tyr Phe Met Leu Ile Ser Cys Leu Met Phe
 1               5                    10                    15

Leu Ser Gln Ser Gln Gly Gln Glu Ala Gln Thr Glu Leu Pro Gln Ala
              20                    25                    30

Arg Ile Ser Cys Pro Glu Gly Thr Asn Ala Tyr Arg Ser Tyr Cys Tyr
         35                    40                    45

Tyr Phe Asn Glu Asp Arg Glu Thr Trp Val Asp Ala Asp Leu Tyr Cys
      50                    55                    60

Gln Asn Met Asn Ser Gly Asn Leu Val Ser Val Leu Thr Gln Ala Glu
 65                    70                    75                    80

Gly Ala Phe Val Ala Ser Leu Ile Lys Glu Ser Gly Thr Asp Asp Phe
                   85                    90                    95

Asn Val Trp Ile Gly Leu His Asp Pro Lys Lys Asn Arg Arg Trp His
              100                   105                   110

Trp Ser Ser Gly Ser Leu Val Ser Tyr Lys Ser Trp Gly Ile Gly Ala
         115                   120                   125

Pro Ser Ser Val Asn Pro Gly Tyr Cys Val Ser Leu Thr Ser Ser Thr
      130                   135                   140

Gly Phe Gln Lys Trp Lys Asp Val Pro Cys Glu Asp Lys Phe Ser Phe
145                   150                   155                   160
```

Val Cys Lys Phe Lys Asn
                165

<210> 44
<211> 93
<212> PRT
<213> Homo sapiens

<400> 44
Met Asp Pro Gly Pro Lys Gly His Cys His Cys Gly Gly His Gly His
  1   5   10   15

Pro Pro Gly His Cys Gly Pro Pro Pro Gly His Gly Pro Gly Pro Cys
               20   25   30

Gly Pro Pro Pro His His Gly Pro Gly Pro Cys Gly Pro Pro Pro His
         35   40   45

His Gly Pro Gly Pro Cys Gly Pro Pro Pro Gly His Gly Pro Gly Pro
     50   55   60

Cys Gly Pro Pro Pro His His Gly Pro Gly Pro Cys Gly Pro Pro Pro
 65   70   75   80

Gly His Gly Pro Gly His Pro Pro Pro Gly Pro His His
                 85   ,   90

<210> 45
<211> 56
<212> PRT
<213> Homo sapiens

<400> 45
His Glu Glu Asn Gln Lys Asp Pro Leu Ala Val Asp Lys Ile Met Lys
  1   5   10   15

Asp Leu Asp Gln Cys Arg Asp Gly Lys Val Gly Phe Gln Ser Phe Phe
               20   25   30

Ser Leu Ile Ala Gly Leu Thr Ile Ala Cys Asn Asp Tyr Phe Val Val
         35   40   45

His Met Lys Gln Lys Gly Lys Lys
     50   55
                                                    .

<210> 46
<211> 239
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (215)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (216)
<223> Xaa equals any of the naturally occurring L-amino acids

```
<220>
<221> SITE
<222> (227)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (236)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 46
Met Ser Phe Phe Pro Glu Leu Tyr Phe Asn Val Asp Asn Gly Tyr Leu
 1               5                  10                  15

Glu Gly Leu Val Arg Gly Leu Lys Ala Gly Val Leu Ser Gln Ala Asp
                20                  25                  30

Tyr Leu Asn Leu Val Gln Cys Glu Thr Leu Glu Asp Leu Lys Leu His
             35                  40                  45

Leu Gln Ser Thr Asp Tyr Gly Asn Phe Leu Ala Asn Glu Ala Ser Pro
         50                  55                  60

Leu Thr Val Ser Val Ile Asp Asp Arg Leu Lys Glu Lys Met Val Val
 65                  70                  75                  80

Glu Phe Arg His Met Arg Asn His Ala Tyr Glu Pro Leu Ala Ser Phe
                85                  90                  95

Leu Asp Phe Ile Thr Tyr Ser Tyr Met Ile Asp Asn Val Ile Leu Leu
            100                 105                 110

Ile Thr Gly Thr Leu His Gln Arg Ser Ile Ala Glu Leu Val Pro Lys
            115                 120                 125

Cys His Pro Leu Gly Ser Phe Glu Gln Met Glu Ala Val Asn Ile Ala
    130                 135                 140

Gln Thr Pro Ala Glu Leu Tyr Asn Ala Ile Leu Val Asp Thr Pro Leu
145                 150                 155                 160

Ala Ala Phe Phe Gln Asp Cys Ile Ser Glu Gln Asp Leu Asp Glu Met
                165                 170                 175

Asn Ile Glu Ile Ile Arg Asn Thr Leu Tyr Lys Ala Tyr Leu Glu Ser
                180                 185                 190

Phe Tyr Lys Phe Cys Thr Leu Leu Gly Gly Thr Thr Ala Asp Ala Met
            195                 200                 205

Cys Pro Ile Leu Glu Phe Xaa Xaa Gln Thr Val Pro Ser Ser Phe His
    210                 215                 220

Thr Val Xaa Gly Ser Thr Leu Arg Ala Trp Arg Xaa Gly Ser Gly
225                 230                 235


<210> 47
<211> 219
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (153)
```

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 47
```
Leu Ala Ala Pro Asp Leu Ser Lys Pro Arg Gly Tyr His Trp Asp Thr
 1               5              10                  15

Ser Asp Trp Met Pro Ser Val Pro Leu Pro Asp Ile Gln Glu Phe Pro
            20              25              30

Asn Tyr Glu Val Ile Asp Glu Gln Thr Pro Leu Tyr Ser Ala Asp Pro
        35              40              45

Asn Ala Ile Asp Thr Asp Tyr Tyr Pro Gly Gly Tyr Asp Ile Glu Ser
    50              55              60

Asp Phe Pro Pro Pro Glu Asp Phe Pro Ala Ala Asp Glu Leu Pro
65              70              75              80

Pro Leu Pro Pro Glu Phe Ser Asn Gln Phe Glu Ser Ile His Pro Pro
            85              90                  95

Arg Asp Met Pro Ala Ala Gly Ser Leu Gly Ser Ser Ser Arg Asn Arg
            100             105             110

Gln Arg Phe Asn Leu Asn Gln Tyr Leu Pro Asn Phe Tyr Pro Leu Asp
        115             120             125

Met Ser Glu Pro Gln Thr Lys Gly Thr Gly Glu Asn Ser Thr Cys Arg
    130             135             140

Glu Pro His Ala Pro Tyr Pro Pro Xaa Tyr Gln Arg His Phe Glu Ala
145             150             155             160

Pro Ala Val Glu Ser Met Pro Met Ser Val Tyr Ala Ser Thr Ala Ser
            165             170             175

Cys Ser Asp Val Ser Ala Cys Cys Glu Val Glu Ser Glu Val Met Met
            180             185             190

Ser Asp Tyr Glu Ser Gly Asp Asp Gly His Phe Glu Glu Val Thr Ile
    195             200             205

Pro Pro Leu Asp Ser Gln Gln His Thr Glu Val
    210             215
```

<210> 48
<211> 49
<212> PRT
<213> Homo sapiens

<400> 48
```
Met Gly His Cys Cys Leu His Cys Phe Pro His Leu His Gly His Arg
 1               5              10                  15

Ala Ala Pro Ala Ala Ala Gly Arg Arg Pro Leu Leu Leu Leu Gln Leu
            20              25              30

Pro Arg Ala Pro Gln Gly Lys Pro Gln Glu Gly Lys Thr Gln Gly Ser
        35              40              45

Gly
```

<210> 49
<211> 26
<212> PRT
<213> Homo sapiens

<400> 49
Cys Val Ser Leu Thr Ser Ser Thr Gly Phe Gln Lys Trp Lys Asp Val
1   5   10   15

Pro Cys Glu Asp Lys Phe Ser Phe Val Cys
            20   25

<210> 50
<211> 22
<212> PRT
<213> Homo sapiens

<400> 50
Ile Met Lys Asp Leu Asp Gln Cys Arg Asp Gly Lys Val Gly Phe Gln
 1   5   10   15

Ser Phe Phe Ser Leu Ile
            20

<210> 51
<211> 18
<212> PRT
<213> Homo sapiens

<400> 51
Gly Lys Tyr Gln Leu Gln Ser Gln Glu Asn Phe Glu Ala Phe Met Lys
 1   5   10   15

Ala Ile

<210> 52
<211> 9
<212> PRT
<213> Homo sapiens

<400> 52
Ile Ala Thr Tyr Arg Ser Leu Leu Glu
 1   5

<210> 53
<211> 12
<212> PRT
<213> Homo sapiens

<400> 53
Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val
 1   5   10

<210> 54

```
<211> 54
<212> PRT
<213> Homo sapiens

<400> 54
Ala Arg Ala Pro Pro Ala Leu Leu Lys Ile Arg Ser Lys Glu Gly Arg
 1               5                  10              15

Cys Ala Gln Pro Ser Arg Thr Ile Gln Thr Ile Cys Leu Pro Ser Met
            20              25              30

Tyr Asn Asp Pro Gln Phe Gly Thr Ser Cys Glu Ile Thr Gly Phe Gly
        35              40              45

Lys Glu Asn Ser Ser Lys
     50



<210> 55
<211> 8
<212> PRT
<213> Homo sapiens

<400> 55
Gly Lys Pro Gln Glu Gly Lys Thr
 1               5



<210> 56
<211> 8
<212> PRT
<213> Homo sapiens

<400> 56
Leu Gly Phe Pro Cys Asn Gln Phe
 1               5
```